

IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently Amended): A back illuminated photodiode array comprising:

a first conductive type semiconductor substrate having a light-incident surface and an opposite surface with a plurality of recessed portions located opposite said light-incident surface; and

a plurality of spatially separated second conductive type semiconductor regions, ~~spatially detached~~ wherein one of said second conductive type regions is located at each bottom of said recessed portions;

wherein said second conductive type semiconductor regions each individually constitute a ~~pn junctions~~ junction together with said first conductive type semiconductor substrate, and

wherein ~~the thickness of each recessed portion is thinner than the thickness of a portion around the recessed portion~~ said first conductive type semiconductor substrate is thinner in said recessed portions of said first conductive type substrate than in portions of said first conductive type semiconductor substrate located around said recessed portions.

Claim 2 (Currently Amended): A back illuminated photodiode array according to claim 1,

wherein each of said recessed portions of said first conductive type ~~said~~ semiconductor substrate is surrounded by portions of said first conductive type semiconductor substrate that form a frame part, located ~~regions~~ between a plurality of said recessed portions, ~~constitute a frame part~~ which is thicker than and frames the respective ~~said recessed portions~~ portion.

Claim 3 (Currently Amended): A back illuminated photodiode array according to claim 1,
wherein said first conductive type semiconductor substrate is composed of a single semiconductor substrate.

Claim 4 (Currently Amended): A back illuminated photodiode array according to claim 1,
wherein said first conductive type semiconductor substrate ~~is provided with~~ comprises a first semiconductor substrate ~~having~~ including said light-incident surface and a second semiconductor substrate bonded to said first semiconductor substrate and ~~having~~ including side walls of said recessed portions.

Claim 5 (Original): A back illuminated photodiode array according to claim 4, further comprising an etching stop layer existing between said first semiconductor substrate and said second semiconductor substrate and having resistance to a specific etching agent to be used for said second semiconductor substrate.

Claim 6 (Original): A back illuminated photodiode array according to claim 4, further comprising an insulation layer existing between said first semiconductor substrate and said second semiconductor substrate.

Claim 7 (Currently Amended): A back illuminated photodiode array according to claim 2, comprising a plurality of electrode pads each formed on ~~each~~ a top surface of each said frame part and individually and electrically connected to each said second conductive type semiconductor ~~regions~~ region, respectively.

Claim 8 (Currently Amended): A back illuminated photodiode array according to claim 7, further comprising:

an electric insulation layer formed on each said frame part; and
a conductive member formed on said electric insulation layer and ~~connecting~~ electrically connecting said second conductive type semiconductor regions with said electrode pads.

Claim 9 (Currently Amended): A back illuminated photodiode array according to claim 8, wherein said electric insulation layer is provided with a contact hole for connecting an end of said conductive member to said second conductive type semiconductor regions.

Claim 10 (Currently Amended): A back illuminated photodiode array according to claim 2, wherein each said second conductive type semiconductor ~~regions extend~~ region extends from ~~said bottoms~~ the bottom of the respective recessed portion at which it is located to side surfaces of said respective recessed ~~portions~~ portion.

Claim 11 (Currently Amended): A back illuminated photodiode array according to claim 2, wherein each said second conductive type semiconductor ~~regions extend~~ regions extend from

~~said bottoms~~ the bottom of the respective recessed portion at which it is located over side surfaces of said respective recessed portions portion to a top surface of ~~said~~ the respective frame part framing said respective recessed portion.

Claim 12 (Currently Amended): A back illuminated photodiode array according to claim 11, comprising:

an electric insulation layer formed on each said frame part and having a contact hole opposing ~~said~~ the top surface of each said frame part; and

electrode pads electrically connected to said second conductive type semiconductor regions through each said contact hole.

Claim 13 (Currently Amended): A back illuminated photodiode array according to claim 2, wherein each said frame part ~~is provided with~~ comprises a first conductive type separation region having a higher ~~in~~ impurity concentration than said first conductive type semiconductor substrate.

Claim 14 (Original): A back illuminated photodiode array according to claim 1 wherein an opening size of said recessed portions decreases with an increase in the depth of said recessed portions.

Claim 15 (Currently Amended): A back illuminated photodiode array according to claim 1, wherein said light-incident surface side of said first conductive type semiconductor substrate is

provided with a first conductive type accumulation layer ~~which is~~ having a higher ~~in~~ impurity concentration than said first conductive type semiconductor substrate.

Claim 16 (Original): A back illuminated photodiode array according to claim 4, wherein mutually opposing surfaces of said first semiconductor substrate and said second semiconductor substrate are different in their crystal plane orientation.

Claims 17-25 (Withdrawn).